

What is claimed is:

1. A method of fabricating a colossal magneto-resistive detector using a thin film transfer method, said method of fabricating comprising:
 - (a) growing a rock salt structure material layer on a perovskite oxide material substrate;
 - (b) growing a protective layer comprising a lattice matched template material on said rock salt structure material layer;
 - (c) depositing a colossal magneto-resistive layer on said protective layer;
 - (d) fabricating a detector array by adding contacts and processing devices to an interconnect surface of said colossal magneto-resistive layer;
 - (e) fabricating a bonded structure by bonding said detector array to a circuit;
 - (f) removing said perovskite oxide material substrate from the rock salt structure material layer; and
 - (g) removing said rock salt structure material layer from the protective layer.

2. A method according to claim 1, wherein said perovskite oxide material substrate is a material selected from the group consisting of LaAlO_3 and SrTiO_3 .

3. A method according to claim 1, wherein said rock salt structure material substrate is a material selected from the group consisting of NaCl , LiF , NaF , KF , and KCl .

4. A method according to claim 1, wherein said lattice matched template material is a colossal magneto-resistive material.

5. A method according to claim 1, wherein said circuit is a readout integrated circuit.

6. A method according to claim 1, wherein step (f) comprises an etching method.

7. A method according to claim 1, wherein step (g) comprises dissolving said rock salt structure material substrate in water, and said method further comprises:

(h) removing excess rock salt structure material/water solution.

8. A method according to claim 7, wherein step (h) is carried out by a water rinse and a method selected from the group consisting of evaporation, triple-point, and freeze drying.

9. A method according to claim 1, further comprising: removing said protective layer by etching.